

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently Amended): A mesh dividing device for performing a mesh dividing process of an analytical target model provided as three-dimensional CAD data into cuboids for numerical-analysis, comprising:

a library for previously storing two or more kinds of parameter kits each including a maximum number of cuboids which defines the upper limit of the number of said cuboids and parameters for division-control for dividing said analytical target model into said cuboids;

a selecting unit for selecting at least one of said two or more kinds of parameter kits stored in said library; and

a mesh dividing unit for performing a mesh dividing process so as to divide said analytical target model, based on a parameter kit selected by said selecting unit (hereinafter referred to selected parameter kit) and said three-dimensional CAD data, into cuboids of less than or equal to the maximum number of cuboids included in said selected parameter kit, and

a conversion time estimating unit for estimating, based on said selected parameter kit, a conversion time required for said mesh dividing unit to perform a mesh dividing process for said analytical target model, wherein said display unit displays said conversion time estimated by said conversion time estimating unit.

2. (Original): The mesh dividing device according to claim 1, further comprising a display unit capable of displaying various kinds of information including the contents of said two or more kinds of parameter kits stored in said library, said display unit displaying the contents of said selected parameter kit.

3. (Currently Amended): The mesh dividing device according to claim 2, further ~~comprising a~~ comprising a parameter kit designating unit by which the operator designates one of said two or more kinds of parameter kits stored in said library while referring to a display provided by said display unit, wherein said selecting unit selects a parameter kit designated by said parameter kit designating unit to be said selected parameter kit.

4. (Original): The mesh dividing device according to claim 3, further comprising a modification unit by which said operator modifies the contents of a parameter kit designated by said parameter kit designating unit while referring to a display provided by said display unit, wherein said selecting unit selects a parameter kit modified by said modification unit to be said selected parameter kit.

5. (Original): The mesh dividing device according to claim 4, further comprising a saving control unit for storing the contents of a parameter kit modified by said modification unit into said library according to an instruction externally given by said operator.

6. (Original): The mesh dividing device according to claim 2, further comprising a reference component designating unit by which the operator designates a reference component from the components of said analytical target model while referring to a display provided by said display unit, wherein said mesh dividing unit handles said reference component designated by said reference component designating unit, and a component smaller than said reference component, as exception to target for said mesh dividing process.

7. (Original): The mesh dividing device according to claim 3, further comprising a reference component designating unit by which the operator designates a reference component from the components of said analytical target model while referring to a display provided by said display unit, wherein said mesh dividing unit handles said reference component designated by said reference component designating unit, and a component smaller than said reference component, as exception to target for said mesh dividing process.

8. (Original): The mesh dividing device according to claim 4, further comprising a reference component designating unit by which the operator designates a reference component from the components of said analytical target model while referring to a display provided by said display unit, wherein said mesh dividing unit handles said reference component designated by said reference component designating unit, and a component smaller than said reference component, as exception to target for said mesh dividing process.

9. (Original): The mesh dividing device according to claim 5, further comprising a reference component designating unit by which the operator designates a reference component from the components of said analytical target model while referring to a display provided by said display unit, wherein said mesh dividing unit handles said reference component designated by said reference component designating unit, and a component smaller than said reference component, as exception to target for said mesh dividing process.

10. (Original): The mesh dividing device according to claim 6, wherein said mesh dividing unit handles a component of which at least one of the maximum outer dimensions in the three axial directions is less than or equal to the corresponding one of the maximum outer dimensions in the three axial directions of said reference component, as exception to target for said mesh dividing process.

11. (Original): The mesh dividing device according to claim 7, wherein said mesh dividing unit handles a component of which at least one of the maximum outer dimensions in the three axial directions is less than or equal to the corresponding one of the maximum outer dimensions in the three axial directions of said reference component, as exception to target for said mesh dividing process.

12. (Original): The mesh dividing device according to claim 8, wherein said mesh dividing unit handles a component of which at least one of the maximum outer dimensions in the

three axial directions is less than or equal to the corresponding one of the maximum outer dimensions in the three axial directions of said reference component, as exception to target for said mesh dividing process.

13. (Original): The mesh dividing device according to claim 9, wherein said mesh dividing unit handles a component of which at least one of the maximum outer dimensions in the three axial directions is less than or equal to the corresponding one of the maximum outer dimensions in the three axial directions of said reference component, as exception to target for said mesh dividing process.

14. (Original): The mesh dividing device according to claim 2, wherein said selecting unit automatically selects said selected parameter kit based on said three-dimensional CAD data.

15. (Original): The mesh dividing device according to claim 14, wherein said selecting unit computes, based on said three-dimensional CAD data, shape-feature information and physical-property-feature information about said analytical target model or components of said analytical target model, and selects a parameter kit corresponding to the computed shape-feature information and physical-property-feature information, to be said selected parameter kit.

16. (Original): The mesh dividing device according to claim 15, wherein:

said library previously classifies and stores said two or more kinds of parameter kits each being brought into correspondence with levels of shape-feature information and physical-property-feature information which are assumed for said analytical target model; and

said selecting unit selects a parameter kit corresponding to levels to which the computed shape-feature information and physical-property-feature information belong, to be said selected parameter kit.

17. (Original): The mesh dividing device according to claim 15, wherein said shape-feature information includes information about the scale of said analytical target model and implementation forms of components in said analytical target model.

18. (Original): The mesh dividing device according to claim 16, wherein said shape-feature information includes information about the scale of said analytical target model and implementation forms of components in said analytical target model.

19. (Original): The mesh dividing device according to claim 17, wherein said implementation form is information about volume distribution in said analytical target model.

20. (Original): The mesh dividing device according to claim 18, wherein said implementation form is information about volume distribution in said analytical target model.

21. (Original): The mesh dividing device according to claim 15, wherein said physical-property-feature information is information about thermal conductivity distribution in said analytical target model.

22. (Cancelled).

23. (Original): The mesh dividing device according to claim 22, wherein said conversion time estimating unit measures a time required for a simplified mesh dividing process for said analytical target model, the simplified mesh dividing process being performed on the basis of said selected parameter kit, and estimates said conversion time to be a value obtained by multiplying the measured time by a predetermined coefficient.

24. (Original): The mesh dividing device according to claim 1, wherein said parameters for division-control include the number of the mesh-division in the three axial directions, tolerances in the three axial directions, and a volume conversion rate.

25. (Cancelled):

26. (Currently Amended): A method for setting, when performing a mesh dividing process to divide an analytical target model provided as three-dimensional CAD data into said cuboids, a maximum number of cuboids which defines the upper limit of the number of cuboids

for numerical-analysis, and parameters for division-control for dividing said analytical target model into said cuboids, comprising the steps of:

previously storing two or more kinds of parameter kits, as a library, each including said maximum number of cuboids and said parameters for division-control;

selecting at least one of said two or more kinds of parameter kits stored in said library, when performing a mesh dividing process for said analytical target model; and

setting a maximum number of cuboids and a parameter for division-control included in the selected parameter kit, on a unit for performing said mesh dividing process; and

a conversion time estimating unit for estimating, based on said selected parameter kit, a conversion time required for said mesh dividing unit to perform a mesh dividing process for said analytical target model, wherein said display unit displays said conversion time estimated by said conversion time estimating unit.